

ABSTRACT

APPARATUS AND METHOD FOR SEPARATING/TREATING PARTICLES/FLUIDS

An apparatus and method for separating a particle stream into particle groups and treating a particle stream, comprising a dilution treatment chamber defining an upstanding channel passageway to receive a particle stream, such that the particle stream falls toward a first-particle-group outlet in the dilution treatment chamber. A transfer chamber casing is adjacent and interconnected to the dilution treatment chamber, and defines a transfer chamber to receive second particle group Second-particle-groups outlets of the transfer chamber are laterally positioned with respect to the channel passageway and allow jet fluid communication there between. A distributor in the channel passageway is provided to break down spread out the particle stream and to distribute the particle stream over a surface area of the channel dilution treatment chamber. Fluid flow apertures create a fluid flow between the transfer chamber and the channel passageway of the dilution treatment chamber so as to project/entrain second particle group to the transfer chamber with a first particle group remaining in the channel dilution treatment chamber for exiting through the first-particle-group outlet of the dilution treatment chamber. The apparatus and method is also used to treat particle streams/fluids. A method and device for separating/treating a stream of particles having a cross sectional area, the stream of particles flowing substantially along a stream flow direction. The method includes: directing a flow of fluid towards the stream of particles, the flow of fluid flowing

substantially along a flow of fluid direction, the flow of fluid having a pressure and magnitude such that the velocity produce a jet of the fluid producing a force impacting on the particles causing the particles to move in a direction substantially parallel to the flow of fluid thereby increasing the cross sectional area and diluting the previous mass of the particles stream, and the separating/treating, particles/fluids.

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